

3D Woven Preforms by J. Goering. Such preforms can be impregnated with a resin and partially cured (called B stage) and stored for relatively long periods at low temperature until use is required. However, attempts to use such a preform in a curved structure has resulted in severe distortion. It is also difficult to form 2 dimensional woven composite preforms into curved shapes.

(004) Thus, it is a primary object of the invention to provide a process for making curved preforms from woven composite materials.

(005) It is another primary object of the invention to provide a process for making curved 3D woven PI preforms structures.

(006) It is a further object of the invention to provide a process for making such 3D woven PI preforms in curved structures that does not significantly reduce the strength of the preform.

SUMMARY OF THE INVENTION

(007) The invention is a process for forming woven materials, and in, particular a 3D woven PI shaped cross-section preform having a first and second upstanding leg portions and first and second foot portions for use in a structure having at least one curved portion of a specific length. The process includes the steps of:

1. Cutting the threads parallel to the direction of curvature over a length equal to the length of the curve, such that the cuts in each thread are spaced from the cuts in the adjacent treads. Preferably, the first and second upstanding leg portions are folded over the first and second bottom foot portions, prior to the step of cutting.